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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

KATZ, VERA

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

04/24/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/537,823	Applicant(s) COLE ET AL.	
	Examiner Vera Katz	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 13-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>06/08/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 1-12 and 26 in the reply filed on 03/09/09 is acknowledged. Claims 13-25 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected subject matter there being no allowable generic or linking claim.

Information Disclosure Statement

2. The listing of references in the specification on pages 1-3 and 14-16 is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Claim Objections

3. Claims 1 and 6 are objected to because of the following informalities:
Claim 1, line 6 recites "a metal surface (Y)". It is unclear if it is the same surface as recited in the preamble and if so, should be "the metal surface (Y)".
Appropriate correction is required.
4. Claim 6; line 2 recites B as a metal ion. Boron is not a metal.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1, is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1, line 7 recites “a coating comprising of silicate-X and Y is formed”. It is unclear if Y is formed in the coating as a metal or in the form of silicate.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 4-6 and 9-12 are rejected under 35 U.S.C. 102 (e) as being anticipated by Heimann (WO 03/012167).

Considering claims 1, and 4-5, Heimann teaches a corrosion resistant coating for a metal surface, the coating includes water-soluble silicate such as

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sodium silicate and deionized water; Sodium is an alkali metal and. The solution can comprise metal ion (x) such as water soluble- Al, Ti or Zr. All of them have a valence +4 or less; [p. 8, lines 10-33]. The coating is water-soluble. As taught by Heimann, there is a bond between the metal and the coating; [p. 20, lines 15-25] and a surface metal can be in the form of silicate; [p. 22, lines 5-15 and p. 13, lines 30-34].

Considering claim 6, the solution comprises a water-soluble Al, boron, Zr and Ti; [p. 10, lines 10-33].

Considering claims 9-12, the solution can include additional components such as rare earth lanthanides, such as Ce or Mo, W, Mn; [p. 10, lines 10-35]. The aforementioned dopants enhance properties of the coating, and, thereby, are considered to be active corrosion components.

7. Claims 1, 4-6 and 9-11 are rejected under 35 U.S.C. 102 (b) as being anticipated by Heimann (WO 98/33856). The reference discloses a metal substrate and forming an alkaline silicate coating such as potassium or sodium silicate on the substrate; [abstract, p. 5, line 30]. The coating includes other (X) metals such as Al, Zr, B, Ti and additional components such as transitional metals of Mo, W, Mn V; [p. 4, lines 5-23]. Metal surface contributes cations to the mineralization forming reactions; [p. 16, lines 27-35]. This statement is considered to be a teaching of a coating comprising silicate (x) and (Y).

8. Claims 1, 4-6 and 9-12 are rejected under 35 U.S.C. 102 (a) and (e) as being anticipated by Heimann (2002/0054998). This Us patent application is similar to (WO 03/012167) cited above.

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 7 and 8 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Heimann (WO 03/012167). Heimann teaches that the aqueous composition comprises about 3 % silicate; [p. 10, lines 5-6]. This value is within the range of the instant claim. The amount of the X is within the range of 0.001 to about 5 wt.% or greater; [p. 10, lines 10-15]. This range of X to silicate overlaps the range of the instant claims. Alternatively, it would have been obvious to one of ordinary skill in the art at the time of the invention to have selected the overlapping portion of the ranges disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness, *In re Malagari*, 182 USPQ 549.

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10. Claims 7 and 8 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Heimann (WO 98/33856). The reference discloses examples 1-4 of concentrations of silicate in the mixture of 6.5%. This value is within the range of the instant application. The range of the additives that are metal X is between 1 and 60%; [p. 8, line15]. The range of X to silicon overlaps the range of the instant claims.

11. Claims 7 and 8 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Heimann (2002/0054998).). Heimann teaches that the aqueous composition comprises about 3 % silicate ; [0046]. This value is within the range of the instant claim. The amount of the X is within the range of 0.001 to about 5 wt.% or greater; [0043]. This range of X to silicate overlaps the range of the instant claims. Alternatively, it would have been obvious to one of ordinary skill in the art at the time of the invention to have selected the overlapping portion of the ranges disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness, In re Malagari, 182 USPQ 549.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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12. Claims 2, 3 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heimann (WO 03/012167). The instant claims recite pH_{IEP} of less than about 3.5 or 2.5 or 3.5.

Considering claims 2-3, the instant specification explains that the negatively charged corrosive species are repelled by the surface at pH values above pH_{IEP} . The reference teaches an exemplary test wherein the coating shows good corrosion resistance at different corrosion conditions and pH 4; [Tables 3-4 and 6-11]. This teaching is considered to be a teaching of pH_{IEP} being of 4 or less. This range overlaps the range of the instant claims. It would have been obvious to one of ordinary skill in the art to select any portion of the disclosed ranges including the instantly claimed ranges from the ranges disclosed in the prior art reference, particularly in view of that; “the normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages”, in re Peterson 65 USPQ2d 1379 (CAFC 2003). Also, In re Geisler 43 USPQ2d 1365 (Fed. Cir. 1997); In re Woodruff 16 USPQ2d 1934 (CCPA 1976), In re Malagari, 182 USPQ 549, 553 (CCPA 1974) and MPEP 2144.05.

Also considering claim 26, as taught by the reference, a layer comprising aluminosilicate or oxides of silicon and aluminum can be formed; [p. 11, line 24 and p. 20, line 24]. Also as it was shown above, there is a bond between the surface metal and the coating; the aforementioned teaching is considered to be a teaching of metal ions diffused during the application of aluminosilicate coating.

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13. Claims 2, 3 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heimann (WO 98/33856). Heimann teaches wide range of pH applicable to the coatings; see also discussion immediately above.

Also, considering claim 26, Heimann teaches that the coating may comprise complex oxide as well as it can comprise silicon and aluminum oxides and is considered to be aluminosilicate; [p. 4, lines 20-35]. As it was shown above, the surface metal cations contribute to the coating. Based on aforesaid, it is considered that the coating includes metal ions diffused from the surface into the aluminosilicate coating.. It would have been obvious to one of ordinary skill in the art at the time of the invention to have an aluminosilicate coating over the metal surface with diffused metal ions from the surface to provide enhanced characteristics of the article, such as improved coating adhesion, corrosion resistance, etc.; [p. 3, lines 25-30].

14. Claims 2, 3 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heimann (2002/0054998). This Us patent application is similar to (WO 03/012167) cited above., see [0111, 0071, 0079, 0062, 0043-44, etc] It would have been obvious to one of ordinary skill in the art to select any portion of the disclosed ranges including the instantly claimed ranges from the ranges disclosed in the prior art reference, particularly in view of that; “the normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages”, in re Peterson 65 USPQ2d 1379 (CAFC 2003). Also, In re Geisler 43 USPQ2d 1365 (Fed. Cir. 1997); In re

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Woodruff 16 USPQ2d 1934 (CCPA 1976), In re Malagari, 182 USPQ 549, 553 (CCPA 1974) and MPEP 2144.05. It would have been obvious to one of ordinary skill in the art at the time of the invention to have an aluminosilicate coating over the metal surface with diffused metal ions from the surface to provide enhanced surface characteristics of the article, such as improved bonding strength, coating adhesion, corrosion resistance, etc.; [0029 and 0071-0075].

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, see attached form PTO-892.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vera Katz whose telephone number is (571)270-7082. The examiner can normally be reached on M - Th 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JENNIFER McNEIL can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Vera Katz/
Examiner, Art Unit 1794

/JENNIFER MCNEIL/
Supervisory Patent Examiner, Art Unit 1794